

Amendments to the Claims

Please amend claims 1-26 as indicated in the listing of claims.

Prior to Examination on the merits, please add new claims 27-32.

The listing of claims will replace all prior versions, and listings of claims in the application:

Listing of Claims:

1. (Currently Amended) A series of isolated polynucleotides comprising at least ten polynucleotides selected from the group consisting of:

- a) a fragment of at least 20 contiguous nucleotides of a bovine genome, or
- ~~e)~~ b) a complement of a);

wherein each of the isolated polynucleotides of a), ~~or and b)~~, comprises a nucleotide occurrence of a single nucleotide polymorphism (SNP) associated with a trait, wherein ~~the~~ each SNP is about 500,000 or less nucleotides from position 300 of any one of SEQ ID NOS:19473 to 21982, and wherein each of the isolated polynucleotides is less than or equal to about 500,000 nucleotides in length.

2. (Currently Amended) The series of isolated polynucleotides of claim 1, wherein ~~the~~ each SNP corresponds to a position that is about 100,000 or less nucleotides from position 300 of a sequence selected from SEQ ID NOS:19473 to 21982.

3. (Currently Amended) The series of isolated polynucleotides of claim 1, wherein ~~the~~ each SNP corresponds to a position that is about 10,000 or less nucleotides from position 300 of a sequence selected from SEQ ID NOS:19473 to 21982.

4. (Currently Amended) The series of isolated polynucleotides of claim 1, wherein ~~the each~~ SNP corresponds to a position that is within a sequence selected from ~~any one of~~ SEQ ID NOS:24493 to 64886.
5. (Currently Amended) The series of isolated polynucleotides of claim 1, wherein ~~the each~~ SNP corresponds to position 300 of a sequence selected from SEQ ID NOS:19473 to 21982.
6. (Currently Amended) The series of isolated polynucleotides of claim 1, wherein ~~the each~~ polynucleotide comprises 50 contiguous nucleotides of a sequence selected from SEQ ID NOS:24493 to 64886.
7. (Currently Amended) The series of isolated polynucleotides of claim 1, wherein ~~the each~~ polynucleotide comprises 100 contiguous nucleotides of a sequence selected from SEQ ID NOS:24493 to 64886.
8. (Currently Amended) The series of isolated polynucleotides of claim 1, wherein ~~the each~~ polynucleotide comprises 50 contiguous nucleotides of a sequence selected from SEQ ID NOS:19473 to 21982.
9. (Currently Amended) The series of isolated polynucleotides of claim 1, wherein ~~the each~~ polynucleotide comprises 100 contiguous nucleotides of a sequence selected from SEQ ID NOS:19473 to 21982.
10. (Currently Amended) The series of -isolated polynucleotides of claim 1, wherein ~~the each~~ polynucleotide further comprises a detectable label at a position corresponding to position 300 of a sequence selected from ~~any one of~~ SEQ ID NOS:19473 to 21982.

11. (Currently Amended) An series of at least ten oligonucleotides that each binds to any one of a different sequence selected from SEQ ID NOS:19473 to 21982, wherein the each oligonucleotide is between 10 and 50 nucleotides in length, and wherein ~~the each~~ oligonucleotide comprises at least 10 contiguous nucleotides of a sequence selected from SEQ ID NOS:21983 to 24492.

12. (Currently Amended) The series of oligonucleotides of claim 11, wherein ~~the each~~ oligonucleotide is at least 15 nucleotides in length.

13. (Currently Amended) The series of oligonucleotides of claim 12, wherein ~~the each~~ oligonucleotide binds to a region that comprises position 300 of ~~any one a sequence selected from~~ SEQ ID NOS:19473 to 21982.

14. (Currently Amended) The series of oligonucleotides of claim 12, wherein ~~the each~~ oligonucleotide comprises at least 15 nucleotides of ~~any one of a sequence selected from~~ SEQ ID NOS:21983 to 24492.

15. (Currently Amended) The series of oligonucleotides of claim 12, wherein ~~each the~~ oligonucleotide is a sequence selected from any one of SEQ ID NOS:21983 to 24492.

16. (Currently Amended) A series of at least ten primer pairs, wherein each primer pair that comprises a first primer that binds to a first target region of a sequence selected from SEQ ID NOS:24493 to 64886 and a second primer that binds to the complement of a second target region of the sequence SEQ ID NOS:24493 to 64886, wherein the a first primer of the primer pair and a the second primer of the each primer pair are at least 10 nucleotides in length and bind opposite strands of the target region, and prime polynucleotide synthesis from the first and second target regions in opposite directions across position 300 of a sequence selected SEQ ID NOS:19473 to 21982.

17. (Currently Amended) The series of primer pairs of claim 16, wherein ~~the each~~ primer pair binds to a region within a sequence selected from any one of SEQ ID NOS:19473 to 21982.

18. (Currently Amended) ~~An series of at least ten~~ isolated oligonucleotides ~~comprising 10 nucleotides, that wherein each isolated oligonucleotide~~ selectively binds to a target polynucleotide of SEQ ID NOS:19473 to 21982, wherein a terminal nucleotide of each of the isolated oligonucleotides binds to position 299, 300, or 301 of ~~any one of a~~ sequence selected from SEQ ID NOS:19473 to 21982.

19. (Currently Amended) The series of isolated oligonucleotides of claim 18, wherein ~~the each~~ oligonucleotide is at least 15 nucleotides in length.

20. (Currently Amended) The series of isolated oligonucleotides of claim 18, wherein the terminal nucleotide of each oligonucleotide binds to position 300 of ~~any one of a~~ sequence selected from SEQ ID NOS:19473 to 21982.

21. (Currently Amended) ~~An series of at least ten~~ isolated oligonucleotide pairs, wherein each pair is effective for determining a nucleotide occurrence at a single nucleotide polymorphism (SNP) corresponding to position 300 of ~~any one of a~~ sequence selected from of SEQ ID NOS:19473 to 21982, wherein each isolated oligonucleotide comprises at least 5 nucleotides from the sequence selected from SEQ ID NOS:19473 to 21982 and wherein the terminal nucleotide of each oligonucleotide of the pair is complementary to a different nucleotide at position 300 of ~~any one of the~~ sequence selected from SEQ ID NOS:19473 to 21982 or a complement thereof.

22. (Currently Amended) An isolated vector comprising ~~a~~ at least one of the series of polynucleotides of claim 1.

23. (Currently Amended) An isolated cell comprising the vector of claim 22.

24. (Currently Amended) A series of isolated polynucleotides comprising at least ten polynucleotides selected from the group consisting of:

a) a polynucleotide that is at least 20 nucleotides in length and is at least 90% identical to a fragment of at least 20 contiguous nucleotides of a bovine genome; or

b) a complement of a),

wherein the fragment of at least 20 contiguous nucleotides of the bovine genome comprises a nucleotide occurrence of a single nucleotide polymorphism (SNP) that corresponds to position 300 of any one of SEQ ID NOS:19473 to 21982.

25. (Currently Amended) The series of isolated polynucleotides of claim 24, wherein ~~the~~ each isolated polynucleotide is at least 25 nucleotides in length.

26. (Currently Amended) The series of isolated polynucleotides of claim 24, wherein ~~the~~ each isolated polynucleotide is at least 90% identical to a fragment of at least 20 contiguous nucleotides of any one of a series of at least ten sequences selected from the group consisting of SEQ ID NOS:19473 to 21982.

27. (New) The series of isolated polynucleotides of claim 1, wherein the series comprises at least 100 polynucleotides.

28. (New) The series of oligonucleotides of claim 11, wherein the series comprises at least 100 polynucleotides.

29. (New) The series of primer pairs of claim 16, wherein the primers of each pair bind to a first target region and a second target region of one of a series comprising at least 100 sequences selected from SEQ ID NOS:24493 to 64886.

30. (New) The series of isolated oligonucleotides of claim 18, wherein each oligonucleotide selectively binds to a target polynucleotide of a series of at least 100 sequences selected from SEQ ID NOS:19473 to 21982.

31. (New) The series of isolated oligonucleotide pairs of claim 21, wherein each pair is effective for determining a nucleotide occurrence at a single nucleotide polymorphism (SNP) corresponding to position 300 of a series of at least 100 sequences selected from SEQ ID NOS:19473 to 21982.

32. (New) The series of isolated polynucleotides of claim 24, wherein the series comprises at least 100 polynucleotides.